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Investigation of the Nursing Theses Related to Wound Care in Turkey: A Systematic Review

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ABSTRACT

Objective: It is aimed to determine practices related to wound care in postgraduate theses in the field of nursing in our country with this study.

Materials and Methods: The data were collected by first scanning the literature. Database of the Higher Education Council National Thesis Center with keywords of searched “Wound,” “Wound care,” “Wound healing,” “Wound infection,” “Nursing,” “Surgery,” “Burn,” “Colostomy and Stoma,” “Diabetic wound,” and “Pressure ulcers.” At the end of the searching, 110 theses were determined between 1984 and 2019. Nineteen theses, whose full text was not available, excluded from the study and 91 theses were examined.

Results: It has been determined that the majority of the theses (77 theses) written in the past 9 years, and 77.3% of them (85 theses) written at the master’s level. It was determined that 63.7% of theses were descriptive, 36.3% were quasi-experimental and experimental. When the distribution of theses by wound type is examined, it was determined that 34.5% were stoma, 20.0% were burn wounds, 17.3% were surgical wounds, 16.4% were diabetic wound (feet), and 11.8% were pressure ulcers. Theses focused on wound care education and risk determination, compliance, and effectiveness of wound care materials.

Conclusion: It has been determined that theses on wound care mostly focus on stoma and burn wounds and are mostly descriptive, such as pain, anxiety, quality of life, knowledge level, and determining care burden. It is thought that there is a need for randomized controlled experimental and qualitative studies for wound care.

Keywords: Nursing, theses, wound, wound care

Cite this article as:
Sürme Y, Aydın Akbuğa G. Investigation of the Nursing Theses Related to Wound Care in Turkey: A Systematic Review. Erciyes Med J 2021; 43(3): 221-7.

This study was accepted as a poster presentation in 2nd International 10th National Turkish Surgery and Operating Room Nursing congress and involved in abstract proceeding book.

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Submitted
21.05.2020

Accepted
21.09.2020

Available Online
02.04.2021

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INTRODUCTION

The wound is the disruption of the anatomical and functional integrity of living tissue. Wound care is a process that concerns many disciplines. Regardless of the wound type, the aim of all wounds is to heal the injured tissue without complications and as soon as possible (1, 2).

Wound care and treatment have been one of the topics that have been kept up-to-date and continuously studied since the existence of humanity. While various herbal remedies and mixtures were used at first, it was aimed to keep the wound closed and dry. Wars contributed to the development of wound care, and larval debridement came to the agenda in 1829 (3). Demonstrating the wounds kept moist healed faster, in the 1960s and 60s, formed the basis of current wound care and studies have been shaped in this direction (4).

Wound care is the responsibility of the nurse as determined by regulation in our country. According to the Regulation on the Amendment to the Nursing Regulation published in 2011, nurses are responsible for evaluating the wound, performing the mechanical cleaning and irrigation, and dressing of the wound. In this context, nurses are expected to have extensive knowledge on wound care and to produce new evidence-based solutions with scientific basis to increase this knowledge (5).

This is the first study that examining nurses’ theses on wound care. With this study, it is aimed to determine practices related to wounds in postgraduate theses in the field of nursing in our country and to guide future studies and wound-related nursing practices.

MATERIALS and METHODS

The research is retrospective, cross-sectional, and descriptive. A literature review was carried out to collect the data, and then, database of the Higher Education Council National Thesis Center was searched with keywords “Wound,” “Wound care,” “Wound healing,” “Wound infection,” “Nursing,” “Surgery,” “Burn,” “Colostomy and Stoma,” “Diabetic wound,” and “Pressure ulcers.”

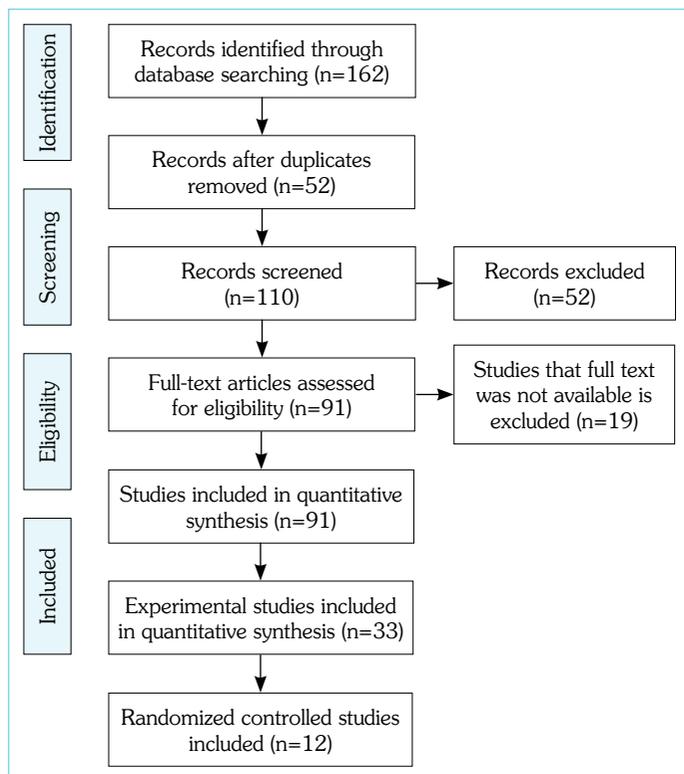


Figure 1. Study selection and inclusion process

Initial screening results identified 162 studies among which 52 were included after excluding repeated studies. At the end of the searching, 110 theses were determined between 1984 and 2019. Nineteen theses, whose full text was not available, excluded from the study and 91 theses were examined. In addition, a comprehensive examination of 33 experimental theses was made (Fig. 1).

The data were obtained by evaluating the characteristics of theses related wound care. The data were collected by a 7-item data collection form structured by the researchers. The data collection form consists of items such as the type, year and the method of the research, the type of wound, the sample group of the research, and the status of whether accessing the full text and whether the study result was effective in experimental theses. Data were analyzed with IBM SPSS Statistics 21 software. The data were evaluated with descriptive statistics such as number and percentage.

Ethics committee approval was not obtained because the research was conducted by accessing theses from a publicly available access site.

RESULTS

It has been determined that the majority of the theses examined (70.0%) have been done in 2011–April 2020 and 77.3% have been done at the master level (Table 1). It was determined that 63.7% of the theses were descriptive and 36.3% quasi-experimentally and experimentally. In addition, only 13.1% theses were randomized controlled trial.

In the theses examined, nurses who conducted postgraduate research studied the effectiveness of different subjects on different

Table 1. Distribution of theses according to their characteristics (n=110)

	Number of theses	Percentage
Years		
1984–2005	20	18.2
2006–2010	13	11.8
2011–April 2020	77	70.0
Type of graduation		
Master	85	77.3
Doctorate	25	22.7
Type of wound		
Stoma	38	34.5
Burn wound	22	20.0
Surgical wound	19	17.3
Diabetic wound	18	16.4
Pressure ulcers	13	11.8
Sample group		
Patient	84	76.4
Nurse	12	10.9
Student	4	3.6
Rat	5	4.5
Companion	5	4.5
Total	110	100.0

types of wounds. When the distribution of theses by wound type was examined, it was found that 20.0% were burn wounds, 17.3% were surgical wounds, 11.8% were pressure ulcers, 34.5% were stoma, and 16.4% were diabetic wound (feet) (Table 1).

In the study, it was determined that 76.4% of the sample group of theses were patients, 10.9% were nurses (Table 1).

In the descriptive studies of burns, pain and anxiety in adults and children, education needs of the family, applications before hospital admission, quality of life, caregiver burden, and nutritional status were evaluated. In the experimental studies on surgical wounds, the effectiveness of wound care methods, suture materials, and surgical site infections were investigated (6–38) (Table 2); however, descriptive studies focused on the knowledge and attitudes of nurses. In addition, wound assessment and care, surgical site infection risk assessment, infection control and reporting, and new developments in care were evaluated.

Experimental studies of pressure ulcers are mostly focused on education (Table 2). In addition, risk factors and their identification, prevention, treatment and care, incidence determination, wound assessment methods, and nurses' knowledge and attitudes were examined. In diabetic wound studies, prevention of diabetic foot wound, effectiveness of wound care methods, and knowledge and attitudes of patients about diabetic foot were evaluated (Table 2, 3).

In stoma studies, the knowledge and attitudes of nurses, the role of the nurse in compliance with colostomy, the effect of colostomy on the worship of individuals, quality of life, and skin complications were emphasized (Table 2, 3).

Table 2. Distribution of experimental theses by wound type, care, and research results (n=33)

Type of wound	Care	Result
Pressure ulcers	Planned nursing care (6) Standard nursing care (7) Student education with concept map (8) The effect of education on nurses' pressure wound knowledge and practices (27)	Effective (6–8, 27)
Surgical wound	Episiotomy care with water (9) Pre-operative skin preparation with chlorhexidine (10) Suture material with antibacterial properties (triclosan coated) (11) Two different hair removal methods (electric shavers and razor) (12) Different types of haircut (regional and strip haircut) (14)	Ineffective (9, 11, 12, 14) Effective (10)
Diabetic wound (feet)	Hydrocolloid wound dressing (13) Olive leaf extract wound dressing (15) Hypericum perforatum – Klinoptilolit – Hydrocolloid wound dressing (16) Regular foot exercise (17) Wound care with tea tree oil (22) Wound care with geranial from rose oil (23) Wound care with allicin (24) Effect of chlorhexidine used in diabetic foot debridement on microorganism reproduction (28)	Effective (13, 15–17, 22–24, 28)
Burn wound	Wound care with sterile liquid Vaseline (18) Wound care with synthetic dressing (19) Wound care with silver-containing hydrofiber (25) Wound care with wax, olive oil, and Alkanna tinctoria mix (30) Effectiveness of simulation method in nursing students' planning of the burn patient care (34) The effect of yoga on burn patients self-esteem and body image (35)	Ineffective (18, 19) Effective (25, 30, 34, 35)
Stoma	The effect of nursing education on stoma compliance (20) The effect of home care on stoma complications (21) The effect of education on self-care agency (26) The effect of lavender oil put into colostomy bag on odor eliminate, life quality, and ostomy adjustment of the patients (29) The effect of web-supported education and peer education on nursing students' knowledge and skills of stoma care (31) The effect of pre-operative stoma site marking on the quality of life and early stoma complications (32) The impact of planned group interactions on social Adjustment in patients with intestinal ostomy (33) The effects of three different methods in stoma care education on the knowledge and skill levels of nursing students (36) Effects of a support group intervention on stoma adaptation, quality of life, and complication severity in individuals with stoma (37) Effect of phone counseling service on quality of life of individuals with intestinal stoma (38)	Effective (20, 21, 26, 29, 31–38)

Table 3. Summary of randomized controlled nursing thesis on wound care (n=12)

Types of thesis author publication year	Aim of the thesis	Method	Conclusion
Pamuk et al. (25), 2017	In the care of patients with second degree burns, it was aimed to examine the effect of hydrofiber dressing containing silver on wound healing	*RCT *IG: 30, CG: 30 in totally, 60 patients were examined *The wound assessment form, the pain assessment scale was used	It has been concluded that the silver-containing hydrofiber dressing can be preferred as an effective care product that heals the burn wound in a shorter time
Toyğar and Türeyn (24), 2018	It is aimed to develop a care material with allicin, which is thought to be cost effective in diabetic foot care, accelerate wound healing, and shorten the wound closure time	*RCT *DM-allicin: 10, DM-SF: 9, DM-control: 9, non-DM-allicin: 10 in totally, 58 rats were examined *The macroscopic healing was evaluated by photographing the wound area. In addition, histopathological examination was performed by taking a biopsy from the wound area	Dressing with allicin has been found effective in healing both diabetic and non-diabetic wounds
Andsoy (11), 2010	It is aimed to determine the effect of the use of antibacterial (triclosan coated) suture material on the surgical site infection in cardiovascular surgery	*RCT *IG: 170, CG: 340 in totally, 510 patients were examined *Infection follow-up form was used	No significant difference was found between the experimental and control groups
Köse (14), 2014	It is aimed to investigate the effect of different haircut application applied in cranial surgery on body image and development of surgical area infection	*RCT *A total of 200 patients were examined in IG and CG *It was evaluated by swab culture that microbiologically, Social Appearance Anxiety Scale and using the data collection form created according to the CDC recommendations	It was determined that there is no difference between the groups in terms of the development of surgical site infection compared to hair shaving, the body image of the patients who applied regional haircut was negatively affected
Sürme and Çürük (22), 2019	It is aimed to determine the effect of tea tree oil on wound healing in diabetic rats	*RCT *DM tea tree oil: 8, DM SF: 8, DM sunflower: 8, non-DM tea tree oil: 8, non-DM SF: 7, non-DM sunflower: 8, in totally, 47 rats were examined *Hematoxylin-eosin and Masson trichrome were examined histopathologically	Surgical wound care with tea tree oil in wound healing has been found to accelerate wound healing in both diabetic and non-diabetic wounds
Marul (12), 2016	The aim of this study was to evaluate the effects of two different hair removal methods on surgical site infections	*RCT *IG: 61, CG: 53 in totally, 114 patients were examined *Demographic information form, surgical process information form, inpatient follow-up form, post-discharge patient follow-up form, and surgical site infection follow-up form were used	No significant difference was found between the intervention (electric shavers) and the control group (razor)
Eraydın (17), 2016	It was performed to examine the effect of regular foot exercise on wound healing in type 2 diabetes	*RCT **IG: 30, CG: 30 in totally, 60 individuals were examined *Patient information form, Wagner wound evaluation form, and diabetic foot exercises form were used	The average ulcer area of the patients in the experimental group decreased significantly in

Table 3 (cont.). Summary of randomized controlled nursing thesis on wound care (n=12)

Types of thesis author publication year	Aim of the thesis	Method	Conclusion
	patients with foot ulcers		all three follow-ups compared to the average of the control group's ulcer area
Talhaoğlu (28), 2019	It was aimed to determine the effect of chlorhexidine solution on the development of wound infection in patients who underwent debridement due to diabetic foot	*RCT *IG: 30, CG: 30 in totally, 60 individuals were examined *The data were collected using the patient information form and infection follow-up form	Fewer microorganisms were detected in the intervention group than control group after debridement
Duluklu (29), 2018	It was aimed to determine the effect of lavender essential oil put in ostomy bag, to eliminate odor because of uncontrolled gas and stool outlet, quality of life, and adjustment to ostomy on permanent colostomy patients	*RCT *IG: 15, CG: 15 in totally, 30 individuals were examined *Patient information form, quality of life scale for individuals with ostomy, and adaptation scale for individuals with ostomy were used	It was determined that experimental group patients using lavender essential oil experienced less smell problem than control group patients; the quality of life and stoma adaptation were higher than the patients in the control group
Karavelli (32), 2014	It was aimed to determine the effect of pre-operative stoma site marking on the quality of life and early stoma complications	*RCT *IG: 30, CG: 30 in totally, 60 individuals were examined **"Patient Information Form," "Complication Assessment Form," and "Hope Center Ostomy Quality of Life Scale (UM-OYKÖ)," "State-Trait Anxiety Inventory," and "Katz Daily Life Activities Index" were used	Education that starts before and continues after the surgery and marking the location of the stoma before the surgery increases the quality of life
Onarıcı (34), 2019	It was aimed to determine the effectiveness of simulation method in nursing students' planning of the burn patient care	*RCT *IG: 31, CG: 30 in totally, 61 students were examined *Burned patient care cognitive level assessment test, student opinions form for the effectiveness of simulation method, student satisfaction, and self-confidence scale in learning, simulation design scale, educational practices questionnaire, burned patient care plan evaluation form, and focus group interview questions were used	It was determined that the simulation method increased the knowledge levels of the students
Taylan (38), 2016	It was aimed to determine the effect of phone counseling service on quality of life of individuals with intestinal stoma	*RCT *IG: 30, CG: 30 in totally, 60 individuals were examined *Informed consent form Questionnaire for individuals with intestinal stoma, adaptation of the ostomy adjustment inventory, and adaptation of quality life scale for the ostomy patients were used	It has been found that telephone counseling is effective in improving the compliance and quality of life of stoma patients during the first 10 weeks after surgery

*RCT: Randomized controlled trial; IG: Intervention group; CG: Control group; DM: Diabetes mellitus

DISCUSSION

The issue of wound and wound care is one of the oldest human-related problems, and its history is as old as humanity (39). In our study, it was determined that 70% of theses on wound care were done between 2011 and April 2020, and 77.3% of theses master level (Table 1). This may be due to the fact that the number of students doing master and doctorate in surgical nursing has increased in the past 10 years, and that wound and wound care are one of the main subjects of surgical nursing. Similarly, the number of master theses is more than the number of doctoral theses. The reason for this may be that the master program in nursing was opened before the doctoral program (40). In addition it may be due to the conditions required to open a doctorate program are heavier than a master's program.

Surgical wounds, diabetic feet, burns, pressure ulcers, and stoma are some of the wound types (39). In the study, 34.5% of theses were found to have a stoma wound. Reasons such as the common occurrence of stomatal complications in patients, having problems with stoma compliance and needing education to overcome these problems, and needing more nursing care to undertake stoma care may have pushed nurses to make thesis about more stoma.

In the current wound care procedure, there are some suggestions for the uncomplicated and fast completion of the wound healing process. These suggestions are; preparing the appropriate environment for the wound healing, removing the factors that would adversely affect the healing, and keeping the physiological environment at an optimum level (6–8, 18–21).

The surgical nurse must know the etiology, healing steps, and wound care product to support the wound healing process and provide care (6, 7, 18). In addition, using risk assessment scales for different types of wounds, implementing preventive interventions by identifying the risky patient group are an important attempt to prevent wounds and complications. In the theses conducted, it was found that increasing the education level of nurses for pressure ulcers, using a scale to determine and prevent wound risk, and even only appropriate standard nursing care prevent the development of wounds (Table 2) (6–8, 27). In another thesis, it was determined that the education given by the nurse to the patient with colostomy positively affects the colostomy compliance (Table 2) (20). It is thought that nurses who having sufficient knowledge and practices about the wound would prevent wound complications, shorten the healing process, and facilitate patient compliance.

Burns are very common cases, especially as a result of accidents. About half of all cases can heal with dressing (41). It is stated in the current literature that modern dressings should be used to reduce costs for wound care, create time for the nurse, prepare the appropriate wound healing environment, and prevent complications. It is noteworthy that in the theses conducted, silver-containing dressings saturated with antimicrobial agents were used in the treatment and care of second-degree burn wounds (Table 2) (18, 19, 25). Silver is a very suitable agent for wounds that are likely to become infected. It comes into contact with the exudate of wound and acts by the release of ions. The 2nd degree burns are wound types that are prone to infection and take time to care. The silver-containing agent has been found to positively affect wound healing (Table 3) (25).

Diabetic wound, one of the most common complications in diabetic patients, is a serious complication that affects quality of life, can cause limb loss, is difficult to manage, and takes long to treat. It has been determined that allicin, tea tree oil, geraniol, and olive leaf extract are used for the treatment of diabetic foot, and these components affect the wound healing process (15, 22–24). Allicin is garlic, and geraniol is components with antimicrobial activity from rose oil (15, 22). Tea tree oil and olive leaf extract are frequently used in wound care with antiseptic and moisturizing properties (23, 24). In the thesis, it is emphasized that these low cost, organic, and easily accessible components can be used in the diabetic wound. In addition, in a thesis, it was stated that regular foot exercise positively affects wound healing in patients with type 2 diabetes (Table 3) (17).

Treatment and care of surgical wounds are important to prevent the development of potential complications such as surgical site infections and wound separation (42). Pre-operative hair shaving methods, suturing materials, and bath subjects with chlorhexidine have been examined in theses to prevent surgical wound infections (Table 2) (10–12, 14). In a thesis conducted, to determine the effect of the use of antibacterial (triclosan coated) suture material on the surgical site infection, no significant difference was found between the experimental and control groups (11). In addition, two theses conducted a randomized controlled, it was reported that different hair shaving methods applied before surgery did not affect the development of post-operative surgical wound infection (Table 3) (12, 14). In another thesis, it was stated that bathing with chlorhexidine before surgery is effective in protecting against surgical site infections (Table 2) (10).

CONCLUSION

As a result of the study, it was determined that theses mostly focus on stoma and burn wounds and are mostly descriptive, such as pain, anxiety, quality of life, knowledge level measurement, and determination of care burden. Experimental and qualitative studies on wound care are determined to be limited.

It is thought that our study will provide information about the current status of theses on wound care and wound healing, which is one of the areas of responsibility for surgical nursing. In addition, our studies are expected to give direction to studies in wound care and wound healing in surgical nursing in Turkey.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – YS; Design – YS; Supervision – YS, GAA; Data Collection and/or Processing – YS; Analysis and/or Interpretation – YS, GAA; Literature Search – YS; Writing – YS, GAA; Critical Reviews – YS, GAA.

Conflict of Interest: The authors have no conflict of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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